



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/588,271

09/28/2006

Cong Xiao

27604U

5016

20529 7590 03/10/2010  
THE NATH LAW GROUP  
112 South West Street  
Alexandria, VA 22314

EXAMINER

LETTMAN, BRYAN MATTHEW

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

03/10/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,271	<b>Applicant(s)</b> XIAO, CONG	
	<b>Examiner</b> Bryan Lettman	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 and 22 December 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed December 22, 2009 has been entered. Claims 1-5 remain pending in the application. The previous objections to the specification and drawings are withdrawn in light of Applicant's amendment to the specification and drawings. The previous 35 USC 112 rejections of claims 1-5 are withdrawn in light of Applicant's amendment to claims 1-4.

### ***Claim Objections***

Claims 1-5 are objected to because of the following informalities: In line 8 of claim 1, "two ends of inner wall thereof" should be changed to "two ends of an inner wall thereof." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 2,552,703 to Alonso.**

Alonso discloses a pump comprising:

a volume tube (84, 92, 93, 102, as shown in Fig. 8) having a metering volume section (87, 104) defined therein;

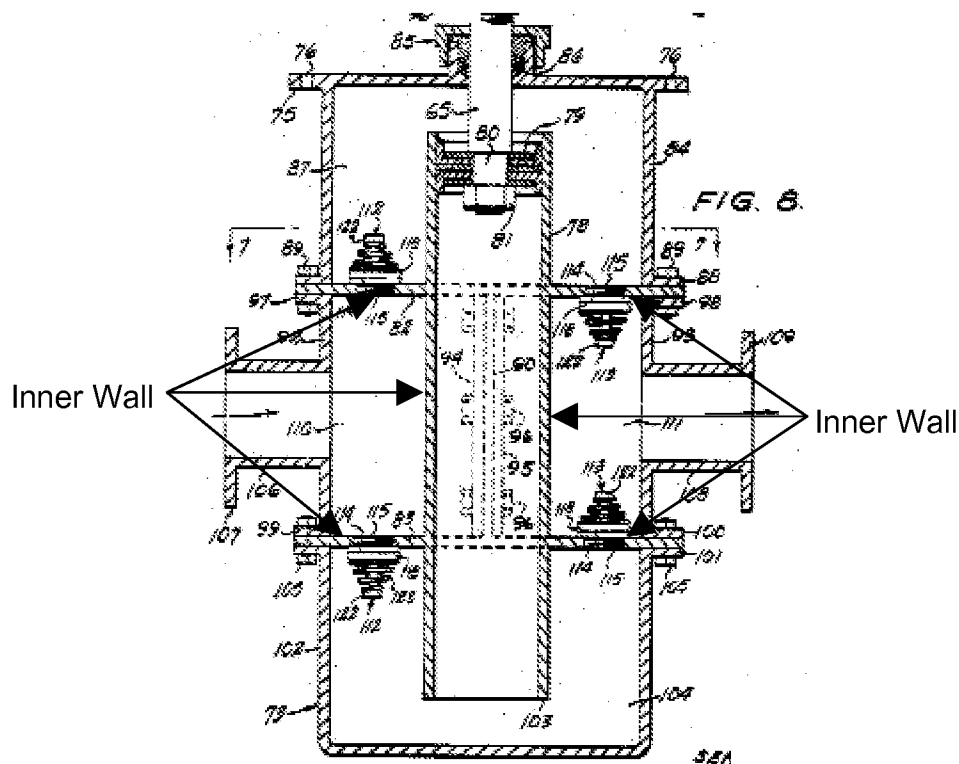
Art Unit: 3746

a dragging mechanism (shown in Fig. 1);

two unilateral inlet valves (112) and two unilateral outlet valves (113) in two ends of an inner wall thereof respectively (the wall which isolates chambers 110 and 11, shown in annotated Fig. 8 below);

a piston (79), wherein the piston (79) is connected to the dragging mechanism (via 65); and

a grating ruler (49 is provided with teeth that effectively operate as a grating ruler by indicating the travel of the dragging mechanism) is set on a moving route of a dragging rod (52) of the mentioned piston (78).



Annotated Figure 8 from Alonso (U.S. 2,552,703)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 3, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 2,552,703 to Alonso in view of U. S. Patent 5,567,122 to Schulte.**

Alonso teaches all the limitations of claim 1, as detailed above, but doesn't teach a lead screw. Schulte teaches a pump wherein:

a dragging mechanism (shown in Fig. 2) also includes a servo motor (44, col. 3, lines 42-46), a belt gear (48a, col. 3, line 48), a lead screw (24) and a lead screw nut (22), which are mechanically connected such that the servo motor (44, col. 3, lines 42-46) turns the belt gear (48a, col. 3, line 48) which rotates the lead screw (24), which moves the lead screw nut (22) (col. 3, lines 46-47);

a casing pipe (15) connected with the lead screw (24) and with a piston (19) is independent of said lead screw (24) ; and

said dragging mechanism (shown in Fig. 2) includes a linear motor (col. 3, lines 42-46).

It would be obvious to one of skill in the art, at the time of invention, to modify the pump taught by Alonso with the dragging mechanism taught by Schulte in order to increase the accuracy of the volume of fluid pumped.

***Response to Arguments***

Applicant's arguments filed December 22, 2009 have been fully considered but they are not persuasive. Applicant argues that Alonso fails to disclose two unilateral inlet valves and two unilateral outlet valves in two ends of an inner wall thereof respectively. As detailed in the above rejections, Alonso discloses the claimed inner valves and inner wall. Accordingly, Applicant's argument is not persuasive.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Lettman whose telephone number is (571) 270-7860. The examiner can normally be reached on Monday - Thursday between 9:00 am and 4:00 pm.

Art Unit: 3746

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. L./  
Examiner, Art Unit 3746

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746